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ABSTRACT

This report was written to identify the safety problems confronting older persons and to educate readers about product and home hazards and appropriate preventive measures. It was written for older consumers, their families, policymakers, and manufacturers. Information on the incidence of home accidents and consumer product accidents among the elderly is presented. A section on products and activities that are most hazardous to older persons provides synopses of major hazard areas for older persons, including bathtubs and showers, farm and garden tractors and riding lawn mowers, flammable clothing, hot water, liquified petroleum gas heating systems, ranges, stairs and steps, swimming pools, bicycles, and chemicals and pollutant hazards. For each area, data on injuries and deaths among older persons are presented, possible solutions are discussed, and product areas needing continued research to address the problem are identified. Products which increase safety and prevent accidents are discussed, including smoke detectors, automatic sprinkler systems, and personal emergency response systems. The need for consumer education and research is emphasized. Figures are included which illustrate products and places associated with deaths and injuries to older Americans, activities affecting safety and self-sufficiency that pose problems for older persons, consumer products associated with deaths among persons age 50 and older, product-related deaths among persons age 50 and older, deaths associated with specific products, the effects of hot water, and products that may enhance consumer product safety. A bibliography and list of resources are provided. (NB)

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Dangerous Products, Dangerous Places:

An AARP Report on Home Safety and Older Consumers

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Dangerous Products, Dangerous Places:

An AARP Report on Home Safety and Older Consumers

Prepared for AARP
by Mary Ellen R. Fise

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Dangerous Products, Dangerous Places:
An AARP Report on
Home Safety and Older Consumers

I. Introduction

As information about the risks of developing cancer, heart disease and other chronic illnesses becomes more prevalent, an increasing number of Americans are taking preventive measures to reduce their risk of disability or death from these causes. But many of these same individuals ignore potential health and accident hazards in a place where they can be easily controlled -- their homes. Not enough attention has been given to home safety by those who report the news, those who establish safety policy, and those who could benefit most from it -- older persons.

Accidents in the home are responsible for the injuries and deaths among older persons. In fact, people 65 years of age and older suffer more than half the home injury deaths in this country. Older persons who worry that a heart attack might someday send them to the hospital emergency room often fail to realize that they might also visit the emergency room as a result of an accident involving a consumer product.

Each year, more than 600,000 older persons (age 65 and over) are treated in emergency rooms for injuries associated with products they use every day. These individuals are more at risk in home accidents and emergency situations because they may sense fire less easily, may be unable to move as quickly to avert hazards, and are more likely to live in older homes which need repairs. Confusion, resulting from physical disease or the effects of medication, may further compound home emergency situations for older persons. These factors contribute to an accidental death rate among persons age 65 and over that is more than three times the rate for the rest of the population. Among this age group, both men and women are affected, as are urban and rural residents.

The problem cannot be blamed simply on old age. While some physical changes associated with aging are involved in consumer product accidents, they are not entirely to blame. Likewise, all accidents are not caused simply by consumer products. They occur within an environmental context, and it is often difficult to separate a product from a potentially hazardous situation or location in the home.

These hundreds of deaths and thousands of injuries that are annually associated with consumer products are not the result of some new phenomenon. Statistics collected during the past few years clearly document the problem and point to the need for action.

From the consumer's standpoint, the most significant hazards in the home are an occupant's lack of knowledge about products and unsafe product design. To date, there has not been a major public education campaign to inform older persons about the hazards, and about the measures they can take to rectify these risks. But even more important, our nation's policymakers, both in legislative and regulatory bodies, need to be educated and encouraged by consumer advocates to seek long term solutions to this problem.

Insufficient attention by policymakers to the safety of older persons has allowed some avoidable hazards to persist. By failing to demand action, these policymakers have sent an implicit message to industry and the public at large that our government will not demand safe products and therefore business can go on as usual. For example, most of the clothing, bedding and upholstered furniture purchased by older persons have not been treated for flame resistance, and liquid propane gas heating systems continue to use odorants that, when leaking, are not easily detectable by many older persons. Yet these and other consumer products directly or indirectly kill and injure thousands of older persons each year, disproving the old saying that "your home is your castle."

Fortunately, as in the fight against cancer and heart disease, there are steps that can be taken by old and young alike to reduce the risk of injury and death in the home. This report briefly examines some of the products and places in the home that should be of greatest concern to older persons. The great majority of the products described are used daily in most homes, although other potentially hazardous products used less frequently by older persons are also discussed. In addition, the report reviews products and services that can help prevent home accidents. Finally, the report calls for a commitment of additional resources by both public and private entities to address safety in the home for older persons and to develop creative new product designs and educational programs.

As the nation's largest member organization for older persons, the American Association of Retired Persons (AARP) has an important responsibility to identify the safety problems confronting older persons and to educate its members and others about product and home hazards and appropriate preventive measures. This report is designed to inform a broad audience, including older consumers, their families, policymakers, and manufacturers, about AARP's commitment to these important consumer protection activities.

II. Which Products and Activities are Most Hazardous to Older Persons?

Injuries and deaths can be prevented when older persons know which products and areas in their homes pose hazards. This knowledge, coupled with information about performing tasks and activities that are generally difficult for older persons, can lead to lifesaving strategies that can easily be incorporated into daily routines. The information presented in Figures 1, 2, and 3 represents products and activities that are hazardous or are perceived as dangerous or difficult by older persons, especially those who are frail.

To educate consumers and promote safer design of consumer products used by older persons, the products and activities associated with this age group need to be better understood. For example, some products are associated with a high number of deaths and injuries. To make these products less risky, new designs might be required, or perhaps increased consumer understanding of the hazards they represent.

Examining the time of year at which accidents occur may also help protect older persons from deaths and injuries. As Figure 4 demonstrates, January, February and March (months when cold weather keeps older persons at home, using more consumer products) are consistently associated with an increased number of consumer product-related death among persons age 50 and older. This high death correlation with cold weather months indicates possible problems with heat sources and other products.

Consumer Hazards

The following section provides synopses of major hazard areas for older persons. It elaborates on the information in Figure 3 that illustrates the consumer product safety problems facing older Americans today. Potential solutions are identified, as are product areas needing continued research to help adequately address the problem. These potential solutions are discussed in detail in Sections IV and V.

Bathtubs and Showers

An examination of Consumer Product Safety Commission (CPSC) death certificate data for 1984 and 1985 reveals that for each of these years bathtubs and showers rank third among products most closely associated with death among persons age 50 and older. Approximately 350 people drown every year in their bathtubs or showers. These drownings, coupled with tap water scalds (see Hot Water, Figure 3), make the bathroom one of the most dangerous areas of the home for older persons.

Some deaths and injuries could be avoided if state-of-the-art designs and fixtures that reduce the likelihood of bathtub and shower falls were incorporated into existing building

codes. Widespread dissemination of information about retrofitting bathrooms with grab bars and other devices might also help reduce these falls. Soft, slip-resistant bathtubs that contain more padding than traditional tubs, as well as bath chairs and other bathing aids have been developed to improve bathroom safety, but many of these products are not easily available in the marketplace.

Farm and Garden Tractors and Riding Mowers

Farm and garden tractors and riding mowers pose hazards to older persons. A review of CPSC death certificates for consumers age 50 and over reveals that tractors and mowers are associated with hundreds of deaths each year among this segment of the population (see Figure 5).

The death data for these products are particularly worrisome given the high percentage of deaths among persons age 50 and older. Injury data are also disturbing. More than 1,000 riding mower injuries occur each year among consumers age 65 and up, along with more than 300 garden tractor injuries.

Deaths involving farm tractors result from accidents in which the tractor ran over the victim; the victim was caught between the tractor and another object; the tractor overturned, pinning the victim underneath; the victim fell off the tractor; or the tractor was driven into another object. What is not known is whether these deaths are the result of design defects, manufacturing defects, consumer misuse, other causes, or a combination of reasons.

Flammable Clothing

There are approximately 260 to 275 annual apparel fire deaths; 75 percent of the victims are age 65 and older. Additionally, there are approximately 3,000 injuries from all kinds of clothing fires, with more than one-third of these serious enough to require hospital admission. The mortality rate for older persons associated with all types of apparel fires is also high -- 49 percent for those age 65-80 and 73 percent for those over 80, compared to a 17 percent mortality rate for the overall population.

Of particular concern is adult nightwear. A study prepared for CPSC by Tri Data found that nightwear was involved in slightly more than half of the apparel fires involving persons age 65 and older. The CPSC report concluded that increasing the flame resistance of nightwear could eliminate more than half the injuries and deaths associated with nightwear flammability.

While many products are associated with fires, apparel-related fires are unusually severe. CPSC estimates of fire loss indicate that apparel-related fires have the highest severity index, based on numbers of deaths per 1,000 fires. The inability

Figure 1

Products and Places Associated with Deaths and Injuries to Older Americans

1. Floors
2. Stairs/Steps
3. Foods and Utensils
4. General Fires at Home (clothing, stoves, cigarettes, fireplaces, etc.)
5. Chairs
6. Beds
7. Lawnmowers
8. Ladders
9. Bathtubs/Showers
10. Industrial Equipment

The list above ranks the products and places which pose the greatest risk to persons age 55 and older. To compile the ranking, the report's investigator examined Consumer Product Safety Commission (CPSC) injury data from 1978 to 1981, death certificates from this same period and a more limited number of CPSC in-depth investigation reports. The products were ranked using CPSC's Age-Adjusted Frequency Severity Index. The Index measures the frequency of accidents as well as their severity.

SOURCE: Doctor Sara Czaja, BOSTI Inc., 1983 (under contract to the U.S. Administration on Aging).

Figure 2

Activities Affecting Safety and Self-Sufficiency that Pose Problems for Older Persons

1. Opening medicine packages
2. Reading product labels
3. Reaching high things
4. Fastening buttons, snaps, or zippers
5. Vacuuming or dusting
6. Going up and down stairs
7. Cleaning bathtubs and sinks
8. Washing and waxing floors
9. Putting clothes on over one's head
10. Putting on shoes, socks, or stockings
11. Carrying purchases home
12. Using tools
13. Having an accident at home and no one knowing about it
14. Using the shower or bathtub
15. Tying shoelaces, bows and neckties
16. Moving around the house without slipping and falling

This list of the problem areas of daily living for persons age 55 and over is based on responses to a survey conducted by the Gallup Organization in 1983. Gallup conducted the nationwide survey for Martech Associates, which was performing a study for the U.S. Administration on Aging. The survey included 1500 non-institutionalized persons age 55 and over. The problem areas listed do not affect all older persons at all times, but they do represent concerns shared by the respondents in this survey.

Figure 3

Consumer Products Associated with Deaths Among Persons Age 50 and Older

in Order of Frequency, 1984 - 1985

	1984	1985*
1.	general home fire** (1207)	general home fire** (1020)
2.	farm tractors (244)	farm tractors (199)
3.	bathtubs or showers (193)	bathtubs or showers (153)
4.	stairs or steps (135)	stairs or steps (121)
5.	mobile homes (118)	mobile homes (85)
6.	clothing (91)	swimming pools (82)
7.	swimming pools (88)	clothing (79) and cigarettes/cigars (79)
8.	cigarettes/cigars (82)	heaters (41)
9.	beds (58)	ranges (37)
10.	ranges (42) and garden tractors (42)	hot water (36)
11.	swimming (39)	beds (34) and garden tractors (34)
12.	heaters (36)	house structures (31)
13.	house structures (31)	gasoline (30)
14.	fishing (28)	bicycles (22) and swimming (22)
15.	gasoline (23)	gas ranges (20)

	1984	1985*
16.	electrical wire (19)	electrical wire (18), fishing (18) and furnaces (18)
17.	whirlpools/hot tubs (17), bicycles (17) and chairs (17)	kerosene or oil heaters (17), cookware (17) and nightwear (17)
18.	gas ranges (16)	chairs (14)
19.	gas or lp heaters (15), ladders (15)	gas or lp heaters (13)
20.	furnaces (9), and nightwear (9)	whirlpools/hot tubs (12)

* The number of deaths for 1985 is incomplete due to reporting lags.

** CPSC has categorized death based on information available on death certificate reports. The category for general home fire includes deaths associated with apparel flammability and other consumer products.

SOURCE: Numbers in parentheses indicate the number of deaths reported to the U.S. Consumer Product Safety Commission for 1984 and 1985.

Figure 4

Product-Related Deaths Among Persons Age 50 and Older

by Month in Order of Frequency

	1984	1985
1.	January (377)	January (373)
2.	March (294)	February (351)
3.	February (285)	March (277)
4.	December (278)	April (240)
5.	April (271)	December (200)
6.	November (240)	June (196)
7.	May (236)	July (194)
8.	June (223)	May (193)
9.	July (217)	August (190)
10.	October (202)	September (162)
11.	August (200)	November (140)
12.	September (192)	October (139)

SOURCE: Death Certificate files, 1984, 1985; National Injury Information Clearinghouse, U.S. Consumer Product Safety Commission.

(Numbers in parentheses indicate the number of deaths for the month listed. Data for 1985 are incomplete due to reporting lags).

Figure 5

Deaths Among Persons 50 and Over

	1984			1985		
	All Ages	50+	% of total deaths	All Ages	50+	% of total deaths
Farm Tractors	405	244	60%	331	199	60%
Garden Tractors	83	42	50%	69	34	49%
Riding Mowers	8	3	37%	10	8	80%

NOTE: Data for 1985 are incomplete. CPSC is still obtaining death certificates for that year. In addition, the deaths listed above are based only on those reported to CPSC through Death Certificates. CPSC estimates, however, that there are approximately 15 deaths each year associated with riding mower accidents. Therefore, the number of deaths among persons 50 and over associated with riding mowers may be substantially higher than those reported in this chart.

of older persons to respond as quickly and adequately as younger persons to clothing fires is a major reason for the higher death rate among those over 50. Flame-resistant sleepwear could have a significant impact on lowering the rate and severity of these deaths and injuries. This objective could be achieved if the CPSC extends the child sleepwear standard to all adult sleepwear.

Hot Water

Home water heaters, if set too high, produce tap water temperatures high enough to cause serious and sometimes fatal burns. Each year there are more than 150,000 burn cases and 100 associated deaths as a result of hot water. At least one-third of the victims are older persons who are more vulnerable to hot water because they react to it more slowly than younger persons. It is estimated that a five-second exposure to 140 degrees F water or a one-second exposure to 158 degrees F water can result in a serious burn injury (see Figure 6). But, by installing protective valves or lowering hot water heating system settings to 120 degrees F, most tap water burns could be eliminated. Studies indicate that skin damage from burns caused by liquids at 120 degrees F or less is generally reversible.*

Unfortunately, consumers who attempt to adjust their water heaters and hence their water temperature are often hampered by confusing or non-specific temperature dials. Some dishwashers may perform optimally at higher temperatures while others may have temperature boosters that elevate their water temperature to the requisite level, allowing lower water temperature settings for other household uses. Consumers need additional information on these and other hot water adjustment matters as well as on products (such as protective valves) which interrupt the flow of hot water. And institutions housing older persons should audit their hot water system use and evaluate the need for protective devices to assure the safety of their residents.

Liquified Petroleum Gas Heating Systems

In 1984, an estimated 20,000 fires were associated with liquified petroleum (LP) gas-fired heating equipment, resulting in an estimated 250 deaths and 900 injuries. LP gas is generally a mixture of propane and butane and is used as a domestic or industrial fuel. Because older persons have difficulty in detecting ethyl mercaptan, a commonly used odorant that warns consumers of an LP gas leak, the risk of an LP gas explosion in an older person's home is higher than in a younger person's home. In addition, the weight of LP gas causes it to collect near the

* Proceedings and Recommendations of the National Conference on Safety for Older Consumers, sponsored by the U.S. Consumer Product Safety Commission and the American Society for Testing and Materials, September 17-18, 1985, p. 137.

Figure 6

The Effects of Hot Water

Temperature/Time/Burn

	°F	°C	Minimum Time for 1st Degree Burn	Minimum Time for 2nd & 3rd Degree Burns
	111.2	44	5 hours	7 hours
Pain Threshold	116.6	47	35 minutes	47 minutes
	118.4	48	10 minutes	14 minutes
	122	50	1 minute	5 minutes
	131	55	5 seconds	25 seconds
	140	60	2 seconds	5 seconds
	149	65	1 second	2 seconds
	158	70	no data cited	1 second

NOTE: Pain Threshold refers to the temperature at which the average adult will feel pain and react to the heat of the water.

SOURCE: Proceedings and Recommendations of the National Conference on Safety for Older Consumers, sponsored by the U.S. Consumer Product Safety Commission and the American Society for Testing and Materials, September 17-18, 1985, p. 137.

Figure 7

Deaths Associated with Gas Ranges

Persons Age 50 and Older

	1983	1984	1985
Gas Ranges	10	16	20

floor, further compounding the detection problem. To date, research has not identified a stronger odorant which could be more easily detected by older persons. And an LP gas detector capable of warning consumers of leaks has not yet been developed.

Ranges

In 1985, 61 persons age 50 and over died in range-associated deaths, and approximately 2,300 persons age 65 and older required emergency room treatment as a result of injuries associated with the kitchen range. Range accidents include electrocution, falls onto the range, burns, inhalation of toxic smoke, and carbon monoxide poisoning. Evaluating the kitchen ventilation system, the types of products stored or hung near a range, and the user's apparel (see Flammable Clothing) can uncover many of the hazards associated with kitchen ranges. The need for such evaluation is becoming more acute because the number of range-associated deaths among persons age 50 and older increased 100 percent between 1983 and 1985 (see Figure 7).

Stairs/Steps

In both 1984 and 1985, stairs or steps were the fourth-ranked hazard associated with deaths among older persons (see Figure 3). In each of these two years there were 120 or more deaths among persons age 50 and older. In addition, there were more than 93,000 injuries associated with stairs or steps that required hospital emergency room treatment among persons age 65 and older.

With respect to stair or step falls, a CPSC study concluded that "Falls of the elderly are likely to result in serious injury stemming in part from the decreased ability of the aging body to absorb the calcium necessary to maintain adequate bone density (osteoporosis) in order to prevent fractures even with minor trauma. Likewise, vertigo, atherosclerosis and arteriosclerosis along with other progressive physical impairments can be contributing factors in fall accidents. These fractures become debilitating for the older individual and often are the precipitating cause for death."

Retrofitting staircase areas to provide more lighting, better handrails, and improved tread to prevent slipping can decrease the likelihood of a stair or step accident, although it will not totally eliminate it. Additional research and evaluation on handrail height, shape and distance from the wall, as well as stair tread width and riser height would also assure that the geometry of new stairs and handrails will help decrease fall accidents. Changes in these dimensions would have to be incorporated into building codes nationwide to assure widespread implementation.

Swimming Pools

More than 80 persons age 50 and older die each year in swimming pool-related accidents. In 1985, swimming pools were ranked sixth on the list of hazards associated with death to persons age 50 and older (see Figure 3). Additionally, there are 25-30 deaths reported each year associated with the activity of swimming. A review of swimming pool-related deaths shows drownings of two types: those which occur while people are swimming and those which occur after the victim accidentally falls into the pool. Improved pool alarms, pool edge markings, pool safety education for older persons and lifesaving measures might help reduce the number of accidents.

Other Hazards

In addition to the above product-related hazards, there are other consumer products that are not traditionally included on lists of items that pose hazards to older consumers. They are mentioned here because older persons are either more vulnerable to the product's ill effects or because the product's use is growing in popularity and deaths and injuries associated with it have shown a corresponding increase. Bicycles and chemical and pollutant hazards are two such examples.

Bicycles

Approximately 20 persons age 50 and older die on bicycles each year and more than 3,800 persons age 65 and older require hospital emergency room treatment as a result of bicycle-related accidents. Because the number of people age 50 and older is growing rapidly, and because bicycles are the consumer product most frequently involved in consumer injury, safety measures might help to counteract the growing accident rate. Today's increased emphasis on fitness, and the popularity of bicycles as transportation in warmer climates, underscore the need for prevention.

Chemicals and Pollutant Hazards

Chemical and other pollutants present in indoor environments may pose particular problems for many older persons. Because of diminished respiratory capacity, these individuals are affected to a greater degree than others by breathing in chemical fumes and other indoor pollutants. Additionally, some older persons are likely to spend up to 90 percent of their time indoors, increasing their exposure to these hazards. Existing health problems such as emphysema, chronic bronchitis, lung disease, allergies, angina or other heart disease, vascular disease and immunological disorders can also be exacerbated by indoor pollutants.

The following have been identified as major contributors to unhealthy indoor air: tobacco smoke, radon, formaldehyde, combustion by-products (such as nitrogen dioxide and carbon monoxide), asbestos, volatile organics and chlorocarbons (such as perchloroethylene, a chemical used in dry cleaning), and bacteria or infectious agents.

III. Which Products Increase Safety and Prevent Accidents?

While the deaths and injuries recounted in Section II may seem overwhelming at first glance, and in some cases out of the average consumer's control, there are ways to address each of these safety problems. Fortunately, there are also products, designed with safety and convenience in mind, that older consumers can use to avert many product-related accidents.

Just as consumer products can lead to accidents, injuries and even death, so too can they save a life, a limb or hours of pain and discomfort. Some of these products, such as smoke detectors, are specifically designed to help consumers avert a known hazard. Others simply make basic chores and tasks easier to perform without injury. Many products in the latter category are listed in Figure 9*.

The frequency and severity of home accidents involving older persons demand that many types of product solutions be explored. The following section briefly describes three products specifically designed to help prevent accidents or lessen their severity: smoke detectors, sprinkler systems and personal emergency response systems (PERS). In addition to providing an important extra modicum of safety, products such as these help enhance confidence about maintaining an independent household.

* Most of the products listed in Figure 9 are described in The Gadget Book: Ingenious Devices for Easier Living. This resource, available from AARP Books (see Bibliography), lists nearly 350 products and devices that are readily available, simple to use, and generally low in cost. The products are grouped into the following categories: Personal Care, Home Environment, Home Maintenance, Communications, Mobility, Health Care, and Leisure and Recreation. Each section contains information about individual products, including their purpose, a description, approximate cost and where to find them. A consumer education program prepared by AARP's Consumer Affairs Program Department entitled "Making Life a Little Easier: Self-Help Tools for the Home," (see Bibliography), also describes products that promote independent functioning in safe living environments. The program consists of a slide presentation and other materials to facilitate a 50-minute educational session for AARP chapters and other interested groups. Both the book and educational program are examples of how valuable information on safety products can be disseminated to older persons.

Figure 8

Products That May Enhance Consumer Product Safety

1. To reduce falls and prevent injury:

   bathtub grab bars
   bath guard rails
   soft bathtubs
   shower bench
   bath chair
   bath lift
   elevated toilet seats
   night lights
   telephone cord reels
   protective corner pads (for tables and counters)
   stair and wall rails
   foot stool with handrail
   non-skid pad or decals
   storage reel for appliance cord
   electric cord retainers
   luminous tape
   luminous wall switches
   carpet tape
   reachers/grippers

2. To reduce water scalding:

   protective plumbing valves

3. To assist in dressing:

   velcro

4. To assist in reading warnings:

   magnifying glass

NOTE: While many of the products contained in the above list are not recent innovations, they are often viewed as conveniences rather than as devices that can enhance safety and potentially enable an individual to avoid a serious accident. These products are listed in no particular order with respect to the degree of safety they provide.

Smoke Detectors

Smoke detectors can provide a life-saving early warning signal to alert people to smoke and fire hazards. U.S. Fire Administration statistics show that a working smoke detector in a home lessens the risk of its occupants dying in a fire by 50 percent. However, in 80 percent of the fires in which elderly persons perished in 1985, there was no smoke detector present or the detector failed to operate. CPSC data show that general home fires are the leading cause of product-related death among persons age 50 and older. When properly installed and maintained, smoke detectors are a cost-efficient device that can offset many of the major factors associated with fire risk to older persons, including loss of physical and mental acuity, higher use of prescription drugs which produce a variety of side effects, isolation and lack of resources to take preventive steps.

Smoke detectors developed for use by people with specific disabilities are also available. Some smoke detectors come with amplifiers, strobe lights or bed vibrators for people with limited hearing. For example, a smoke detector for the hearing impaired consists of a smoke detector transmitter, a wrist band one-channel radio receiver and a battery charger. When the detector senses smoke, it sends a signal to the wrist band worn by the hearing-impaired person, which in turn causes a warning vibration. The system works when the receiver is within 200 feet of the transmitter detector. This type of smoke detector is designed for the deaf, the hearing impaired or those who are tone deaf and are unable to hear a regular smoke detector signal.

Unfortunately, these alternative types of smoke detectors have not been widely publicized. There needs to be more public education about installation and maintenance of smoke detectors, which would be critical to the success of any fire prevention program (i.e. requiring installation and maintenance of smoke detectors in residential and business facilities in local ordinances, distribution of free batteries, and volunteer projects to assist in installation and maintenance of smoke detectors).

Automatic Sprinkler Systems

Automatic sprinkler systems carry water or other extinguishing fluid throughout buildings for protection against fires; they are usually triggered when the system is exposed to abnormal heat. Residential sprinkler systems are designed to confine fire to the room of origin. Residential sprinkler systems are 80 percent effective in protecting property and 95 percent effective in saving lives.

Many jurisdictions have adopted ordinances that require the installation of sprinkler systems in newly constructed multi- and single-family dwellings. In some areas, building owners are

required to retrofit multi-family dwellings with sprinkler systems within a specified time period. In many cases, proposals for requirements like these run into stiff opposition, often the result of misinformation regarding the cost, usefulness and consequences of sprinkler use.

The possibility of requiring sprinkler systems in all new dwellings through ordinances or laws needs further study by state and local policymakers. Until such systems are made mandatory, builders should be encouraged by consumer advocates to offer sprinkler systems on a regular basis as a buyer option in new homes. Information about the importance of sprinkler systems in group living situations, i.e. Board and Care homes, should be made available by sponsors and associations representing group living situations. Insurance companies need to be encouraged by fire marshals and consumer groups to provide homeowners and renters insurance discounts for the installation of sprinkler systems and smoke detectors.

In general, there is a need for data that will educate consumers and builders on the importance of sprinkler systems as well as provide useful information about purchasing these safety devices. Additional research by home builders on methods to install these systems cost effectively would help remodelers and building owners adapt their dwellings.

Personal Emergency Response Systems

Personal emergency response systems (PERS) are generally thought of as communication devices for hospitals or nursing homes. However, they can and should be viewed as systems that can also minimize the consequences of an accident in the home.

Most PERS operate via hand-held transmitters which send impulses through telephone lines from the home to a central security station or response center which can then alert family members, police or fire departments that help is needed. PERS are primarily used for medical alerts, but they can also be used for intrusion (home security) alerts, fire alerts (similar to smoke detectors) or as a simple means of communication in times of distress or in potential accident situations. Some systems have additional features such as an inactivity timer which sends a call for help if the user has not pushed a special button or used the telephone within a certain time span. Other systems allow for direct voice communication between the user and the response center, which allows the user to communicate immediately even if he or she cannot reach the telephone.

While only one PERS carries the Underwriters Laboratories (UL) listing, most PERS manufacturers assemble their systems with parts and procedures that are UL-approved. Many hospitals, telephone companies and social service providers market PERS and, in effect, endorse a particular system. Some experts have recommended the development of standards to assure the

effectiveness of these systems, and to maintain proper operation of the response centers. Because the product is growing in popularity, these and other issues relating to its use and effectiveness will have to be monitored closely. And because of the diversity of PERS, it is important that older persons and other users review the cost and the variety of options available.*

* AARP's publication, "Personal Emergency Response Systems: A Product Specific Study of PERS", describes the various systems available, contains a chart for comparing the products and provides tips for consumers to use when deciding to rent or buy an emergency response system (see Bibliography).

IV. Consumer Education and Research

The U.S. Consumer Product Safety Commission (CPSC) is the federal regulatory agency charged with protecting consumers from unreasonable risk of injury. A recent CPSC project entitled "Safety for Older Consumers" focused on home accidents and older persons, producing a comprehensive Home Safety Checklist that older persons can use to evaluate the safety of their homes. The checklist is organized by areas of the home. Hazards that appear in more than one area of the home, such as electrical cords, are highlighted at the beginning of the checklist and short reminders about them are incorporated throughout other sections of the list. CPSC estimates that approximately 1.2 million checklists have been distributed.

AARP has used the CPSC checklist as the basis of its National Home Safety Drive. In 1985, the Consumer Affairs Section of AARP's Program Department initiated a pilot project to educate and increase older people's awareness of home safety. A home safety kit was developed, including five Home Safety Checklists, a model press release and a public service announcement. Volunteers were recruited to conduct home safety checks using the checklists. Additionally, an informal and non-scientific survey was conducted by AARP in 108 homes around the country to determine which products and areas of the home were most in need of safety improvements and to gauge consumer reactions to the safety check concept.

The biggest problem areas identified by the AARP survey included:

- loose or non-existent railings or handbars in bathrooms and on staircases;
- wires running along or under carpets;
- homes without smoke detectors and non-skid bathroom mats; and
- no emergency numbers posted near the telephone.

In 1986 and 1987 AARP expanded its Home Safety Drive. A survey of a limited sample of persons participating in the drive found that more than one-third were not aware of safety hazards identified in their homes. Approximately 82 percent of the individuals who received home safety checks have made plans to correct the problem(s). The remaining individuals cited the following as reasons why they do not expect to correct the identified hazard(s):

- repairs are not necessary (52.2 percent)
- repairs are too costly (32.6 percent)

- the individual can not do the repair(s) (4.3 percent)
- the landlord will not permit the change(s) (4.3 percent)
- other (6.5 percent)

The majority of the individuals (63 percent) who received home safety checks were not aware of community services that help make home repairs. Although the survey was limited in sample size, its findings may be indicative of widespread problem areas and a need for expansion of the Home Safety Drive to include an emphasis on follow-up visits to help consumers make needed changes. The survey also identified home safety as a pocketbook issue for many consumers, thereby highlighting the need for more community resources to help them make safety improvements.

Expanding upon the Home Safety Drive's distribution of Home Safety Checklists in 1986 and early 1987, AARP initiated the Seattle Home Safety Drive in June 1987. The goal of this project is to incorporate home safety checks into a city-wide safety effort. In addition to conducting the safety checks, AARP is coordinating a Speakers Bureau that is recruiting older persons who have incurred home-related injuries. These individuals make presentations highlighting modifications in the home that can prevent the type of accidents that resulted in their injuries.

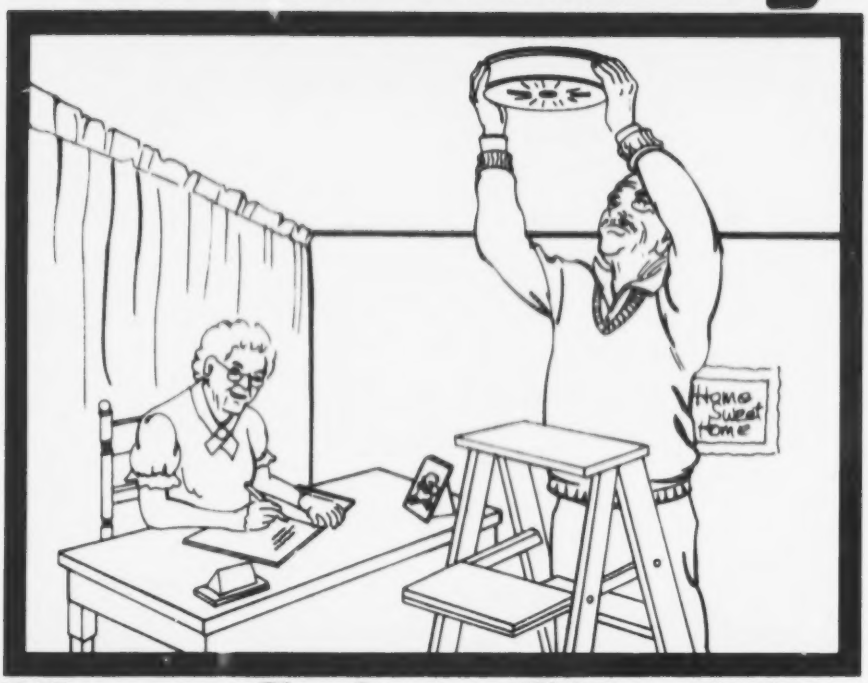
The project has also made special efforts to recruit volunteers to conduct home safety checks. These volunteers include home health care nurses, aides, therapists and homemakers; chore workers; case managers; church and synagogue members; case managers; senior center members; and relatives who belong to Alzheimer, stroke, Parkinson and caregiving support groups. Recruitment efforts focus on volunteers who have established relationships with older persons and could bring a "friend-to-friend" approach to the safety check program.

For the first time, the project is addressing solutions to the cost problems associated with making home safety improvements. Also, it is trying to leverage discounts for older persons at hardware stores for the materials needed to repair safety hazards. Finally, it identifies insurance companies that offer discounts to those who install smoke detectors or take other home safety measures.

As a result of these and other efforts, the AARP Home Safety Drive has far exceeded its initial goals of distributing 1,000 kits which would provide 5,000 home safety checks throughout the nation. As of late 1987, more than 15,000 kits and 75,000 checklists have been distributed. Figure 9 illustrates a sample page from the CPSC Checklist and includes information on obtaining a copy.

Figure 9

Safety
For Older Consumers



Home Safety Checklist

U.S. Consumer Product Safety Commission June 1986

For a free copy of the CPSC Home Safety Checklist, call the CPSC toll-free hotline: 800-638-CPSC. For a free copy of the AARP Home Safety Check Kit, write to AARP, P.O. Box 2240, Long Beach, CA 90801, Stock #D12405. For additional information about other AARP educational resources on home and product safety, write to AARP Consumer Affairs, 1909 K Street, N.W., Washington, DC 20049.

While the checklist provides a good first step in educating the public about accident prevention, its success is limited to its distribution and follow-through by consumers on its recommendations. These and other educational efforts are only one limited means of addressing the high rate of injury and death to older persons from home accidents. New product designs and finishes are another approach. For example, the number of burns and deaths among older persons resulting from the ignition of nightwear might be significantly reduced if a flammability standard for adult sleepwear were established. A similar flame resistance standard for children's sleepwear resulted in a 97 percent reduction in deaths among children that were associated with flammable sleepwear.

The CPSC is just beginning to investigate ways to encourage manufacturers to consider the special problems of older consumers when designing consumer products. A design guide has been developed that identifies the physical and behavioral characteristics common among older consumers that may have an effect on their ability to safely use consumer products. The guide matches those characteristics with specific products and product features that are associated with injuries to older consumers. The guide should be a particularly valuable resource for the manufacturers of the products it discusses. However, others will also benefit since the guide will, in effect, establish a framework for consideration of design characteristics appropriate for older consumers. A limited number of free copies of the design guide are available to those with a professional interest in safety and product design by calling (800) 638-CPSC.

V. Conclusion

Older persons across the country are using consumer products and living in homes that, on a daily basis, pose a threat of accidental injury or death. The dangers may be evident to the trained eye, but in many cases they are hidden hazards awaiting their victim. As this report demonstrates, hazardous products and areas of the home are identifiable, and solutions exist to rectify the problems they present. The key factor in achieving safer home environments for older persons is the commitment by public and private agencies to educate consumers and take effective actions to assure that needed safety improvements in products and home environments are implemented by manufacturers and consumers.

The U.S. Consumer Product Safety Commission (CPSC) should play a principal role in alleviating hazards to older persons. The Commission has made "Safety for Older Persons" a priority project in recent years. Commission staff have produced the "Home Safety Checklist for Older Consumers" and a product design guide for manufacturers to address the specific product safety problems of older persons. CPSC staff are also participating in the development of voluntary safety standards for step stools. The Commission has also researched hazards associated with portable electric heaters and other heating equipment which affect persons of all ages. But, aside from these very limited initiatives, the Commission has done little else to address the variety of product hazards facing older persons.

As a result of this relative inactivity, industries manufacturing hazardous products have felt little or no pressure from the CPSC to modify their products. AARP believes that the CPSC -- as the primary federal agency responsible for protecting consumers from unsafe products -- must become more active and play a leadership role in addressing the broad range of safety issues affecting the growing older population.

Congress and state legislatures must also be prepared to step in and fill any void created by CPSC inaction. Generally, these legislative bodies are sensitive to the concerns of older Americans, but virtually no attention has been paid to older consumer safety. It does not seem possible that lawmakers are disinterested in the fact that home accidents are responsible for the injuries and deaths to their older constituents. Rather, it is more likely that legislators are not aware of the magnitude of the problem.

AARP has endorsed the immediate passage of the Consumer Product Safety Commission Improvement Act (H.R. 3343). The Senate also has introduced a reauthorization measure (S. 1882) which would streamline CPSC's voluntary standards practices. Such legislation would strengthen the CPSC's functioning as a regulatory and enforcement agency. In recent years, Congress and CPSC have been reluctant to develop mandatory safety standards,

preferring instead to rely on voluntary standards, but that process has been slow and ineffectual to date. In AARP's view, informal voluntary action should not be substituted where formal or mandatory regulation and/or enforcement by the CPSC are necessary.

Both bills require that a study be conducted to determine the need to expand or revise the existing children's sleepwear standard to afford equal protection to adults. AARP believes a mandatory standard for adult sleepwear is the most effective way to reduce clothing fire-related deaths and injuries.

In addition to legislation strengthening CPSC, AARP encourages:

- Manufacturers should require that hot water heaters be preset at 120 degrees and there should be a prohibition on heaters that get hotter than 150 degrees.

- The feasibility of incorporating state of the art designs and fixtures (i.e. bathtubs, stairways) into existing building codes should be considered by committees reviewing model codes.

- Municipalities and states should consider adopting smoke detector and sprinkler system ordinances.

In general AARP believes that federal, state, and local government agencies should be willing to engage in rulemaking and to take strong enforcement actions when appropriate. If not, the effectiveness of these agencies is weakened and the safety of all consumers is jeopardized. A combination of education, research, and advocacy by a myriad of consumer, government and industry groups are all necessary in the following areas:

- product design and manufacturing defects;

- consumer misuse of products, e.g. farm and garden tractors, riding mowers, bicycles, ranges, pool and pool equipment;

- methods to reduce older persons' exposure to chemical and pollutant hazards;

- possible standards and operations of personal emergency response products and response centers; and

- new odorants for use in liquid propane gas that can be easily detected by older persons.

Reducing the injury and death toll among older persons from consumer product-related accidents will not happen overnight. But these accidents cost our society billions of dollars, and more importantly, prevent many older persons from living healthy, productive lives. To reduce the number and severity of accidents, comprehensive planning, including new product development, product modification and intensive consumer education programs using the CPSC checklist and other materials should be expanded.

The anticipated growth of the over-60 population during the next 20 years lends additional support to the need for action. With this growth there will be more people living alone and more people who are frail and less mobile. These consumers will need information and assistance to modify their homes and their behavior in a manner that will increase safety and reduce accidental deaths and injuries. Many older consumers are now modifying their daily living habits to reduce their risk of contracting dreaded chronic illnesses. They deserve to receive information that will help them adjust their use of hazardous consumer products. With a heightened awareness of these risks, older Americans can then join AARP in demanding from our nation's policymakers and manufacturers the protection they deserve.

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